

Properties	Test methods	Units	Values	
Productname	-	-	PEI GF30	
Color	-		nature	
Average molar mass (average molecular weight)	-	10 ⁶ g / mol		
Density	ISO 1183-1	g / cm³	1,510	
Water apsorption				
 after 24/96 h immersion in water of 23°C (1) 	ISO 62	mg		
 after 24/96 h immersion in water of 23°C (1) 	ISO 62	%		
 at saturation in air of 23°C / 50% RH 	-	%	0,50	
 at saturation in water of 23°C 	-	%	0,90	
THERMAL PROPERTIES (2)				
Melting temperature (DSC, 10°C/min)	ISO 11357-1/-3	°C		
Dynamic glass transition temperature +	ISO 3146	°C	217	
Dynamic glass transition temperature ++	ISO 3146	°C		
Thermal conductivity Lambda λ at 23°C	-	W / (K · m)	0,230	
Coefficient of linear thermal expansion				
\bullet average value between 23 and 60°C	-	m / (m · K)	20 x 10 ⁻⁶	
\bullet average value between 23 and 100°C	-	m / (m · K)	20 × 10 ⁻⁶	
$\ensuremath{\bullet}$ average value between 23 and 150°C	-	m / (m · K)	20 × 10 ⁻⁶	
Temperature of deflection under load				
• method A: 1,8 MPa	ISO 75-1/-2	°C	210	
Vicat-Erweichungstemperatur - VST/B50	ISO 306	°C		
Maximal allowable service temperature in	air			
 for short periods (3) 	-	°C	200	
• continously: for 5.000 / 20.000 h (4)	-	°C	- / 170	
Minimal service temperature (5)	-	°C		
Flammability (6)				
Oxygen-Index	ISO 4589-1/-2	%		
 according to UL 94 (3 / 6 mm thickness) 	-	-	V-0 / V-0	
Specific heat capacity	-	J / (g · K)		
MECHANICAL PROPERTIES AT 23°C (7)				
Tension test (8)				
 tensile stress at yield / tensile stress at break (9) + 	ISO 527-1/-2	N / mm²	- / 165	
 tensile stress at yield / tensile stress at break (9) ++ 	ISO 527-1/-2	N / mm²		
• tensile strength (9) +	ISO 527-1/-2	N / mm²		
tensile strain at yield (9) +	ISO 527-1/-2	%		
tensile strain at break / elongation at break (9) +	ISO 527-1/-2	%	- / 2	
 tensile strain at break / elongation at break (9) ++ 	ISO 527-1/-2	%		
• tensile modulus of elasticity (10) +	ISO 527-1/-2	N / mm²	9500	
• tensile modulus of elasticity (10) ++	ISO 527-1/-2	N / mm²		
Compression test (11) compressive stress at 1/2/5 % nominal 	ISO 604	N / mm²		
strain (12) +	150 004	N / 11111		
Creep test in tension (8)	100 000 1	N / 2		
stress to produce 1% strain	ISO 899-1	N / mm ²		
stress to produce 1% strain (σ 1/1000)	ISO 899-1	N / mm ²	40	
Charpy impact strenght - Unnotched (12)	ISO 179-1/1eU	kJ / m ²	40	
Charpy impact strength - Notched Charpy impact strength (15° V-notched,	ISO 179-1/1eA ISO 11542-2	kJ / m ² kJ / m ²		
both-sided)				
Izod impact strength - Notched +	180/2A	kJ / m ²		
Izod impact strength - Notched ++ Ball intentation hardness (13)	180/2A 2039-1	kJ / m ²	165	
Rockwell hardness (13)	ISO 2039-2	N / mm ²	103	
Shore hardness D (3 / 15 s)	ISO 868	N / mm		
Coefficient of sliding friction m (14)	-	N / IIIII		
	-	-		



μ/km

μ/km

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ELECTRICAL PROPERTIES AT 23°C

IEC 60243-1 KV / mm ume resistivity + IEC 60093 Ω · cm 10 ¹⁵ ume resistivity ++ IEC 60093 Ω · cm 10 ¹⁵ face resistivity ++ IEC 60093 Ω · cm 10 ¹⁵ face resistivity ++ IEC 60093 Ω · cm 10 ¹⁵ face resistivity ++ IEC 60093 Ω · cm 10 ¹⁵ face resistivity ++ IEC 60093 Ω · cm 10 ¹⁵ face resistivity ++ IEC 60093 Ω · cm 10 ¹⁵ face resistivity ++ IEC 60093 Ω · cm 10 ¹⁵ face resistivity ++ IEC 60250 Ω 10 ¹⁵ at 100 Hz + IEC 60250 - 3,7 at 11MHz + IEC 60250 - 10 ¹⁵ at 100 Hz + IEC 60250 - 10 ¹⁵ at 100 Hz + IEC 60250 - 10 ¹⁵ at 100 Hz + IEC 60250 - 10 ¹⁵ at 11MHz + IEC 60250 - 10 ¹⁵ at 11MHz + IEC 60250 - 0	thic strength (15) +++ IEC 60033 0 · cm 10 ¹⁵ ume resistivity ++ IEC 60033 0 · cm IEC 60033 0 · cm face resistivity ++ IEC 60033 0 · cm IEC 60033 0 · cm face resistivity ++ IEC 60033 0 · cm IEC 6003 0 · cm face resistivity ++ IEC 60033 0 · cm IEC 6003 0 · cm atto M2 + IEC 60250 - IEC 60250 - at 10 M2 + IEC 60250 - IEC 60250 - at 10 M2 + IEC 60250 - IEC 60250 - at 10 M2 ++ IEC 60250 - IEC 60250 - at 1 M42 + IEC 60250 - IEC 6012 - at 1 M42 + IEC 6012 - IEC 6012 - at 1 M42 + IEC 6012 - IEC 6012 - at 1 M42 + IEC 6012 - IEC 6012 IEC 6012	ECTRICAL PROPERTIES AT 23°C			20	
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Legend

- 1. Following the ISO 62 written procedures \emptyset 50 x 3 mm.
- 2. The values listed for properties are largely taken from the material sheets supplied by raw material suppliers and other publications.
- 3. The properties listed are all values for semi-crystalline materials, and not amorphous materials.
- 4. Valid for just a few hours of thermal stress for applications where there is little or no mechanical stress.
- 5. Quoted thermal stability over 5,000 / 20,000 hours. Beyond this period, the tensile strength decreases to around 50% of the initial value. As with all thermoplastics, the maximum permissible operating temperature is in many cases primarily dependent on the duration and magnitude of the mechanical stress which occurs during exposure to heat.
- 6. In view of the reduction in impact strength with decreasing temperature, the lower service temperature limit is in practice particularly determined by the magnitude of the impact stress applied to the material. The values listed here are based on adverse shock loads and should not be considered an absolute practical limit.
- 7. It should be noted that these values, which have been estimated from the material sheets provided by raw material suppliers, must under no circumstances be taken as a guide to behaviour or reaction when the material is subject to fire. There are no "UL Yellow Cards" for these semi-finished products.
- 8. The data given for dry material (+) are mostly average values of tests carried out on test specimens consisting of round bars Ø40 60 mm. Considering the very low water absorption of POM, PET and PC, the values for the mechanical and electrical properties of dry (+) and damp (++) specimens of these materials can be considered almost equal.
- 9. Test piece: Type 1 B
- 10. Test speed: 20 mm/min. (5 mm/min for PA6.6 + GF, POM-C + PTFE and PET TX)
- 11. Test speed: 1 mm/min.
- 12. Test specimen: cylinder (Ø 12 x 30mm)
- 13. Pendulum used: 15 J.
- 14. Measured on 10-mm thick test specimens
- 15. Electrode configuration: two cylinders Ø 25 / Ø 75 mm; in transformer oil according to IEC 296; measured on 1-mm thick natural specimens. It is important to know that the dielectric strength of black extruded material (PA6, PA6.6, POM and PET) can be up to 50% lower than that of natural-coloured material. A possible microporosity in the centre of POM semi-finished products also results in a significant reduction in dielectric strength. This table is intended to assist you in selecting materials. The values listed here are within the usual range of product properties. However, they are not guaranteed property values and should not be used as the sole basis for construction. It should be noted that PA6.6 + GF is a fibre-reinforced material which is therefore considered anisotropic (properties are different dependent upon whether the fibres are parallel or perpendicular to the extrusion direction)